

In the drawings;

Replace the originally filed informal drawings with the formal drawings submitted herewith. These drawings have been amended by inserting "Replacement Sheet" in the top margin of each sheet.

The following paragraph is an addendum to the Amendment of December 12, 2005.

The Examiner's statement that "only that which is old is illustrated" in Figures 1, 3, 4, and 5 is not correct. Figure 1 illustrates how a waypoint maybe approximated with the utilization of two rectangles. This is an example of how the moving haven maybe determined by decomposing the problem into smaller more manageable sub-problems. Figures 3, 4, and 5, which are fully explained in the unmarked specification (Document 1 of this amendment) commencing on page 10 line 3 and continuing through page 11 line 20, explain how the moving haven is formed by this invention with the use of simple shapes, such as rectangles and arcs. The Examiner is referred to Docket 1, page 2 lines 25 - 28 and page 5 lines 1 -6 where it is specifically stated the prior art did not divide the problem into small simple sub-solutions. It is therefore evident that Figures 1, 3, 4, and 5 need not be labeled Prior Art.

REMARKS

Claims 1, 3, 6, 8-24 are in this application. Claims 1, 3, 6, 8, and 20 have been amended. Claims 4, 5, and 7 have been canceled. Claim 2 had been canceled previously.

Claims 1, 3, 6, 8, and 20 have been amended to more succinctly recite what Applicant regards as his invention.

Claims 1, 10, and 20 stand rejected in view of the admitted prior art.

Claims 1, as amended, and 10, specifically recite methods, for generating a moving haven boundary by creating rectangles centered on the voyage plan and having edges that are separated by the width of the moving haven. Claim 20, as amended, specifically recites, an apparatus for generating a moving haven boundary by creating rectangles centered on the voyage plan and having edges that are separated by the width of the moving haven. These claims recite the determination a pie shaped area, at each waypoint of a voyage plan, having an arc drawn between the vertices of rectangles on either side of the waypoint. The polygonal line comprising the edges of the rectangles and the arcs of the pie shaped regions establishes the boundary of the moving haven.

Such methods and apparatus are not taught or implied by the description of the prior art in this application. The Examiner's statement that one of ordinary skill in the art would establish a width centered on the voyage plan is not supported by the prior art statement. Nowhere in the description of the prior art is the establishment of a polygonal line comprising the edges of rectangles and arcs of pie shaped areas for the boundary of the moving haven taught or implied. the Examiner is referred to page 2 lines 25-28 and page 4 line 28 through page 5 line 6, where it is specifically stated that the difficulties of the prior art were do to the fact that the problem was not decomposed into smaller more manageable sub-problems. Nowhere in the description of the prior art is a method or apparatus discussed that divides the problem of calculating the boundary of a moving haven into simple sub-solutions, such as rectangles and pie shaped areas having arcs centered at waypoints, as recited in claims 1,10, and 20.

In view of the above, Applicant contends that claims 1, 10, and 20 recite patentable contributions to the prior art. That these claims are in conditions for allowance and such action is respectfully requested.

Claims 3, 6, 8, and 9 depend directly or indirectly from claim 1, these dependent claims draw novelty from claim 1 and recite additional novel features of the invention. For example, Claim 6, which the Examiner has indicated is patentable, recites a novel method for approximating the arcs of the pie shaped areas at a waypoint. The angular distance between a first vector established between the vertex of a rectangle terminating at the waypoint and the waypoint, and a second vector established between the vertex of a rectangle originating at the waypoint and the waypoint is determined. After establishing this angular distance the first vector is rotated through selected angles until the angular distance between the two vectors has been traversed, The end of the rotated vectors are then connected to approximate the arc.

For another example, claim 8 specifically recites the formation of a buffer, internal to the boundary, by forming buffer rectangles centered on the moving haven boundary having widths equal to twice a selected distance from the boundary and lengths equal to the distances between vertices of the boundary. The recitation continues with the formation of buffer arcs between the vertices of the buffer rectangles, the buffer arcs and the edges of the buffer rectangles forming internal and external polygonal lines to the boundary. The internal buffer polygonal line being selected as the buffer boundary.

The formation of an internal buffer polygonal line in this manner, which in essence is the manner in which the polygonal line of the moving haven is formed, is not recited or implied in the admitted prior art of this application. The Examiner is referred to page 4 line 25 through page 5 line 10 where the difficulties of constructing a moving haven buffer with the methods of the prior art are discussed. Particularly to item C on page 5 line 7, where it is stated that two separate methods were required for calculating the polygonal line of the boundary and the polygonal

line of the buffer in the prior art. It is therefore evident that one of ordinary skill in the art would not establish a polygonal line for the internal buffer as recited in claim 8.

Still another example, claim 9 recites the novel method for forming the arcs of the buffer boundary utilizing the method employed forming the arcs of the moving haven boundary as recited in claim 6.

In view of the above, Applicant contends that claims 3, 6, 8, and 9 recite novel and patentable contributions to the prior art, that these claims are in condition for allowance, and such action is respectfully requested.

Claims 11-19 depend directly or indirectly from claim 10, these dependent claims draw novelty from claim 10 and recite additional novel features of the invention. As the Examiner has indicated claims 11-15, 18, and 19 are patentable if dependent from an allowable base claim. Since claim 10 is a patentable claim, these claims are patentable.

Claims 16 and 17 depend from claim 10 and recite additional novel features of the invention. For example, claim 17 specifically recites the formation of a buffer, internal to the boundary, by forming buffer rectangles centered on the moving haven boundary having widths equal to twice a selected distance from the boundary and lengths equal to the distances between vertices of the boundary. The recitation continues with the formation of buffer arcs between the vertices of the buffer rectangles, the buffer arcs and the edges of the buffer rectangles forming internal and external polygonal lines to the boundary. The internal buffer polygonal line being selected as the buffer boundary. This method is essentially the method used for creating the moving haven boundary.

Claims 18 and 19 were objected to for depending from a rejected base claim. As shown above claim 10, from which these claims indirectly depend via claim 17, recite a novel and patentable contribution to the prior art and is an allowable claim. Consequently, claims 18 and 19 depend from an allowable claim and are therefore allowable claims.

In view of the above, Applicant contends that claim 11-19 recite novel and patentable contributions to the prior art, that these claims are in condition for allowance, and such action is respectfully requested.

5 Claims 21 - 24 depend and draw novelty from claim 20 and recite additional novel features of the invention. Claims 21, 22, and 24 were objected to for depending from a rejected base claim. As shown above claim 20, from which these claims depend directly and indirectly, recites a novel and patentable contribution to the prior art and is an allowable claim. Consequently, claims 21,22, and 24 depend from an allowable claim and are therefore allowable claims. Claim 23 recites an
10 apparatus which provides a buffer boundary polygonal line in the same a manner that the moving haven boundary polygonal line is provided.

In view of the above, Applicant contends that claim 21-24 recite novel and patentable contributions to the prior art, that these claims are in condition for allowance, and such action is respectfully requested

15 Attached are:

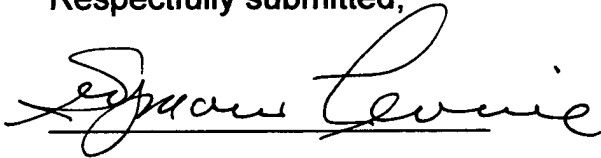
1) A copy of the specification with all amendments contained therein without any amendment markings.

2) A copy of the specification with all amendment markings.

3) A complete set of formal drawings to replace the informal drawings
20 originally filed. Each sheet of drawings are identified as a replacement sheet in the top margin of the sheet.

Applicant contends that he has responded to each and every issue raised by the Examiner in the Office Action of September 7, 2005, that the claims now in this application recite novel and patentable contributions to the prior art, that these claims are in condition for allowance and such action is respectfully requested.

Respectfully submitted,

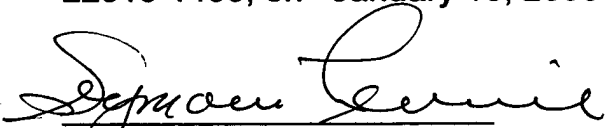


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I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Commissioner for Patents, United States Patent and Trademark Office, P. O. Box 1450 Alexandria, VA 22313-1450, on January 10, 2006


Seymour Levine

Jan. 10, 2006
Date Signed